MARINE AND TERRESTRIAL ISOPODS FROM JAMAICA.

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MARINE ISOPODS.

While working in the Johns Hopkins laboratory at Montego Bay, Jamaica, in 1910, Dr. C. B. Wilson and Dr. E. A. Andrews collected a large number of isopods for the United States National Museum. A list of the species is herein given with notes on the variation of *Exocorallana tricornis* (Hansen) and *Exocorallana quadricornis* (Hansen). The notes on the color markings were furnished by Doctor Wilson. A new species of *Exosphæroma* was collected by Doctor Andrews, the description of which is given below.

Family TANAIDÆ.

LEPTOCHELIA DUBIA (Krøyer).

Tanais dubius Krøyer, Nat. Tidsskr., vol. 4, 1842, p. 178, pl. 2, figs. 20–22.
Leptochelia dubia Richardson, Trans. Conn. Acad. Sci., vol. 11, 1902, p. 279.
Leptochelia incerta Moore, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, pp. 165–166.

Locality.—Bathing Beach, Montego Bay. (Collected by E. A. Andrews.) Five specimens.

Family GNATHIIDÆ.

GNATHIA, species ?

Locality.—Montego Bay. A number of larvæ from gills of Jack (*Caranx crysos*) and from the mouth of a Yellow Jack. (Collected by C. B. Wilson.)

Family CIROLANIDÆ.

CIROLANA PARVA Hansen.

Cirolana parva Hansen, Vidensk. Selsk. Skr. (6), vol. 5, 1890, pp. 340–341, pl. 2, figs. 6–6*b;* pl. 3, figs. 1–1*d*.—Moore, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, p. 167, pl. 8, figs. 6–8.—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 111–114.

Locality.—Bogue Islands, Montego Bay. About 25 specimens. Found living upon mangrove roots. (Collected by E. A. Andrews.)

Family EXOCORALLANIDÆ.

EXOCORALLANA QUADRICORNIS (Hansen).

Corallana quadricornis HANSEN, Vidensk. Selsk. Skr. (6), vol. 5, 1890, p. 382, pl. 7, fig. 3.

Locality.—Bogue Islands, Montego Bay. Two specimens. Commensal in black ascidian on mangrove roots. The color is gray-white with a pattern of light-brown stripes and spots. (Collected by C. B. Wilson.)

Also about 25 specimens, found living in burrows in a bright red sponge on mangrove roots. These have the horns on the head very large. The color is white with a light-brown pattern over the dorsal surface, just as in the preserved specimens (collected by C. B. Wilson); three specimens were taken from a red sponge on mangrove roots. (Collected by E. A. Andrews.)

EXOCORALLANA TRICORNIS (Hansen).

Corallana tricornis HANSEN, Vidensk. Selsk. Skr. (6), vol. 5, 1890, pp. 379–381, pl. 6, figs. 4–4*p;* pl. 7, figs. 1–1*d*.—MOORE, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, p. 169, pl. 9, figs. 2–5.

Localities.—Montego Bay and White Rock.

Of the specimens from Montego Bay, there was 1 specimen, parasitic on hog-fish, *Lachnolaimus maximus;* about 10 specimens, parasitic on yellow-tail (*Ocyurus chrysurus*); about 10 specimens, parasitic on green parrot-fish (*Sparisoma viride*)—these have the horns on the head small; 8 specimens, parasitic on red snapper (*Neomænis aya*). The color is snow-white, the dorsal surface with spots and lines of dark blue-black; eyes brown; egg masses brown at first, later changing to dark blue-black. About 23 specimens, parasitic on yellow-jack (*Caranx crysos*); about 75 specimens, parasitic in mouth of yellow-jack (*Caranx crysos*); about 50 specimens, parasitic in eye sockets and mouth of rock-fish (*Mycteroperca bowersi*). The color is white with an open pattern of light brown over the dorsal surface, thinning to separate spots along the lateral margins; the egg mass is at first pale yellow-brown, deepening with development until it becomes almost jet-black; the eyes are dark brown. One specimen, parasitic in the gill cavity of the red snapper (*Neomænis aya*); about 30 specimens, parasitic in mouth of a 20-pound red snapper (*Neomænis aya*). The horns on the head are very small. The color is whitish, the cartilage gray, with the dorsal pattern in light cinnamon-brown; the eggs are light brown; the eyes are dark brownish-black. Three specimens, parasitic on the green parrot-fish (*Sparisoma viride*); 4 specimens, parasitic on French grunt (*Hæmulon flavolineatum*); 1 specimen, parasitic on gills of jack (*Caranx hippos*); 1 specimen, parasitic on barracuda (*Sphyræna barracuda*); 8 specimens, from eye sockets and mouth of the large blue parrot-fish (*Scarus cæruleus*). The color of large females with eggs is white, with a row of star-shaped brown spots across the center of each thoracic segment on the dorsal surface, the abdomen with a wash of faint brown over the entire

dorsal surface; the egg mass is a bright green-blue; the eyes are brown. In the younger, or smaller individuals the star-shaped marks are confluent over the whole surface of the thorax and abdomen. The horns between eyes are very small. The frontal horn is large and broad, rounded. The eyes are large and close together. Twelve specimens, parasitic on lane snapper (*Neomænis synagris*). The color is white, the dorsal surface with one or two rows of brown star-shaped spots across each segment; the eyes are dark blue-black. The frontal horn is very large, rounded, produced, upturned. The eyes of both sexes are large and close together. Eight specimens, parasitic in eye sockets of the yellow-tail (*Ocyurus chrysurus*). The color is light brownish-yellow, with a row of brown star-shaped spots across each segment on the dorsal surface; the eyes are dark seal-brown; the egg masses are a bright salmon-pink. All the horns on the head are small, the two posterior ones almost obsolete. The eyes in both sexes are very large and close together. Four specimens, parasitic in the eyes of the yellow-tail (*Ocyurus chrysurus*). The color is a light yellowish-white, each segment with a single row of brown spots across the dorsal surface. The eyes are very large and close together, almost confluent in one specimen. One specimen, from the fins of the sea-porcupine (*Diodon hystrix*). The color is gray-white, with a row of brown star-shaped spots across the dorsal surface of each segment; the eyes are dark brown. This is probably an immature female. (Collected by C. B. Wilson.)

One specimen from White Rock, from the gill cavity of the rock-hind (*Epinephelus adscencionis*). The color of the ventral surface is white, of the dorsal surface white, nearly covered with a loose pattern of light reddish-brown; the eyes are black; the claws on the tips of the legs red-brown; the legs themselves white.

Family ÆGIDÆ.

ROCINELA SIGNATA Schiœdte and Meinert.

Rocinela signata Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 12, 1879–80, pp. 399–401, pl. 13, figs. 3–6.—Moore, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, p. 171, pl. 10, fig. 2.—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 209–210.

Locality.—Montego Bay; parasitic on the French grunt (*Hæmulon flavolineatum*). The color is beautifully variegated in delicate shades of brown, pink, and gray. The head and first three segments and the abdomen are delicate pink with fine dots and lines of red-brown on the dorsal surface; the remaining thoracic segments are a light olive-gray, with variegated spots, lines, and blotches of dark olive-green, the fourth segment with a prominent wide transverse band of dark brown spots; all the segments have a narrow band of red-brown on the lateral margins; the telson has a central crescent of black spots shaped like this ⟨; the eyes light pink; the egg mass is jet-black.

A second specimen was found parasitic on the parrot-fish (*Sparisoma abildgaardi*); it had small spots of brownish purple on the dorsal surface.

A fragment was found parasitic on the hog-fish (*Lachnolaimus maximus*). (Collected by C. B. Wilson.)

Family CYMOTHOIDÆ.

ANILOCRA LATICAUDA Milne Edwards.

Anilocra laticauda Milne Edwards, Hist. Nat. Crust., vol. 3, 1840, p. 259.
Anilocra mexicana Saussure, Rev. Mag. Zool., 1857, p. 505.
Anilocra leachii (Krøyer) Schiœdte, Nat. Tidsskr. (3), vol. 4, 1866, p. 205, pl. 11, figs. 2*a*–2*g*.
Anilocra laticauda Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 13, 1881–83, pp. 126–131, pl. 11, figs. 1–3.—Moore, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, p. 172, pl. 10, figs. 3–4.—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 227–228.

Locality.—Montego Bay; one female; parasitic on the parrot-fish. The color is dark slaty-blue, uniform throughout. (Collected by C. B. Wilson.) One female; parasitic on the eye of the yellow-tail (collected by C. B. Wilson). The color is uniform gray-white, the brown mark due to partial drying in the sun. One male; found attached to outside of cheek at the angle of the jaw of *Bathystoma rimator* (collected by C. B. Wilson). The color is light brown above, deeper toward the lateral margins and on the posterior pair of appendages (telson); the eyes are white with a small black dot in the center of each facet. The respiratory lamellæ have a fine penciling of brown lines, thicker and darker in color near the outer margins. One male; parasitic on *Bathystoma rimator* (collected by C. B. Wilson). One female (collected by E. A. Andrews). One female; from a small yellow-tail (collected by E. A. Andrews).

CYMOTHOA ŒSTRUM (Linnæus).

Oniscus œstrum Linnæus, Syst. Nat., ed. 10, vol. 1, 1758, p. 636, No. 2; Fauna Suecica, ed. 2, 1761, p. 499, No. 2053; Syst. Nat., ed. 12, vol. 1, 1767, pt. 2, p. 1059, No. 2.
Asellus œstrum Olivier, Encycl. Method., vol. 4, 1789, p. 253.
Cymothoa œstrum Fabricius, Entom. Syst., vol. 2, 1798, p. 505, No. 6.—Leach, Trans. Linn. Soc. London, vol. 11, 1815, p. 372; Dict. Sci. Nat., vol. 12, 1818, p. 352.
Cymothoa dufresnei Leach, Dict. Sci. Nat., vol. 12, 1818, p. 352.
Cymothoa immersa Say, Journ. Acad. Nat. Sci. Phila., vol. 1, 1818, pp. 399–400.
Cymothoa œstrum Desmarest, Cons. Géu. Crust., 1825, p. 309, pl. 48, figs. 6–7.—Miers, Proc. Zool. Soc. London, 1877, pp. 671–672.—Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 14, 1883–84, pp. 271–279, pl. 8, figs. 5–13.—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 254–256.

Locality.—Montego Bay; one male; parasitic on parrot-fish (*Sparisoma abildgaardi*). The color is a uniform yellowish-gray. (Collected by C. B. Wilson.)

Family SPHÆROMIDÆ.

EXOSPHÆROMA CRENULATUM (Richardson).

Sphæroma crenulatum RICHARDSON, Trans. Conn. Acad. Sci., vol. 11, 1902, pp. 292–293, pl. 39, fig. 40; Bull. U. S. Nat. Mus., No. 54, 1905, p. 298.

Locality.—Montego Bay; 2 specimens; living on the outside of a chiton. (Collected by C. B. Wilson.)

EXOSPHÆROMA ANTILLENSE, new species.

Body contractile, able to roll into a complete ball; surface reticulate; color yellow, with a few scattered spots of brown; on the head are three arcuate patches of brown; on the first segment there is a transverse band of brown about the middle of the segment; on the second segment are two small transversely elongated patches of brown on either side of the median line situated close together; on the fourth segment are four patches, two on either side of the median line, the two middle ones being far apart; on the fifth, sixth, and seventh segments are two patches on each segment, one on either side of the median line; on the first abdominal segment are two patches in longitudinal series on either side of the median line and three patches in longitudinal series on the lateral parts of the segment; on the terminal abdominal segment are two patches, one on either side of the median line, situated close together.

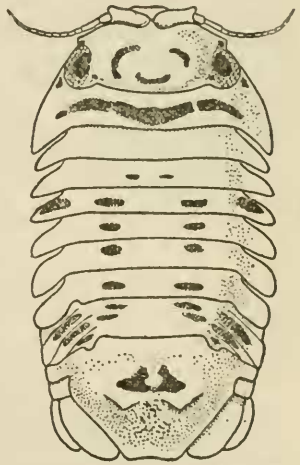

FIG. 1.—EXOSPHÆROMA ANTILLENSE. × 8½.

The head is wider than long and has the front produced in a small median point. The eyes are small, composite, more or less ovate with the upper end produced angularly, and situated in the post-lateral angles of the head. The first pair of antennæ have the first article large, and elongate, about twice as long as wide; the second article is small and rounded, and is about one-third the length of the first article; the third article is narrow, elongate, and is about one-and-a-half times the length of the second article; the flagellum, composed of eleven articles, extends about two-thirds the length of the lateral margin of the first thoracic segment. The second antennæ, with a flagellum composed of twelve articles, extend to the posterior margin of the third thoracic segment.

The first segment of the thorax is a little longer than any of those following and has the post-lateral angles produced backward and the antero-lateral angles produced forward on either side of the head. The following six segments are subequal.

The abdomen is composed of two segments, the first with three suture lines on either side indicative of other partly coalesced segments. The second or terminal segment is produced to an extremity which is somewhat truncate, with a slight emargination in the middle. On the dorsal surface are two large, elevated tubercles, one on either side of the median line. The uropoda do not extend beyond the apex of the terminal segment of the abdomen; both branches are similar in shape, posteriorly rounded, but the outer one is shorter, extending only two-thirds the length of the inner branch.

The legs are all alike, ambulatory.

Only one specimen was collected by E. A. Andrews at Montego Bay. It was dredged off the bathing beach.

Type.—Cat. No. 43349, U.S.N.M.

As the specimen was completely rolled up into a ball, it was impossible to get at the pleopods without injuring it.

DYNAMENE MOOREI Richardson.

Dynamene perforata Moore (female), Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, pp. 173–174, pl. 10, fig. 10.—Richardson (female), Trans. Conn. Acad. Sci., vol. 11, 1902, pp. 291–292.

Dynamene moorei Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, p. 303.

Locality.—Snug Harbor, Montego Bay; about 17 specimens; found under girdle of chitons taken at tide line. (Collected by E. A. Andrews.)

TERRESTRIAL ISOPODS.

The following isopods were collected in Jamaica by Dr. Thomas Barbour.

Family ONISCIDÆ.

PORCELLIO LÆVIS Latreille.

Porcellio lævis Latreille, Hist. Nat. Crust. et Insectes, vol 7, 1804, p. 46; Genera Crustaceorum et Insectorum, vol. 1, 1806, p. 71.—Leach, Edinb. Encycl., vol. 7, 1813–14, p. 406; Trans. Linn. Soc. London, vol. 11, 1815, p. 375.—Milne Edwards, Hist. Nat. Crust., vol 3, 1840, p. 169.—Budde-Lund, Crust. Isop. Terrestria, 1885, pp. 138–141 (see Budde-Lund for further synonymy).—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 614–616.

Locality.—Mandeville; about 75 specimens.

PORCELLIONIDES PRUINOSUS (Brandt).

Porcellio pruinosus Brandt, Bull. Soc. Imp. Naturalistes de Moscou, vol. 6, 1833, p. 19.

Metoponorthus pruinosus Budde-Lund, Crust. Isop. Terrestria, 1885, pp. 169–171 (see Budde-Lund for synonymy).—Dollfus, Bull. Soc. Zool. France, vol. 18, 1893, p. 187.—G. O. Sars, Crust. Norway, vol. 2, 1899, pp. 184–185, pl. 80, fig. 2.—Chilton, Trans. Linn. Soc. Lond. (2), vol. 8, 1901, p. 141.—Stoller, 54th Report New York State Mus., 1902, p. 213.—Paulmier, Bull. New York State Museum, 1905, pp. 183–184.—Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, pp. 627–629.

Porcellionides pruinosus Stebbing, Records of the Indian Museum, vol. 6, pt. 4, No. 12, 1911, p. 189.

Locality.—Mandeville; about 75 specimens.

Family ARMADILLIDIDÆ.

CUBARIS JAMAICENSIS, new species.

Body ovate, nearly twice as long as wide, 9½ mm. by 5 mm. Head and dorsal portion of the thoracic segments covered with low tubercles. The tubercles on each segment are arranged in a transverse row of four about the middle with a group on either side of about nine. On the first segment the lateral groups are composed of about eleven tubercles, and there are also two low tubercles on the anterior portion of the middle dorsal region, one on either side of the median line. There are two tubercles on the terminal abdominal segment, one on either side of the median line at the base of the segment. The color is brown, with a median row of light spots, one on the anterior portion of each segment. There is also a group of light spots on each segment under the lateral group of tubercles.

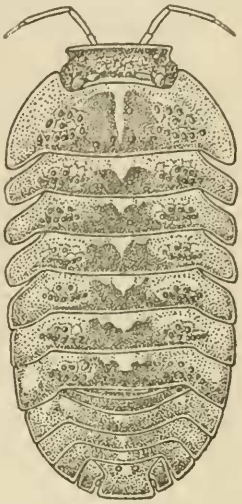

FIG. 2.—CUBARIS JAMAICENSIS. × 6⅔.

The head is wider than long, 2½ mm.: 1mm., with the frontal margin straight and forming a narrow border. The eyes are small, round, and composite. The first pair of antennæ are rudimentary and inconspicuous. The second pair have the first article short; the second about three times as long as the first; the third about twice as long as the first; the fourth is about as long as the second; the fifth is a little longer than the fourth. The flagellum is composed of two articles, the second of which is about three times as long as the first. The prosepistoma is flat.

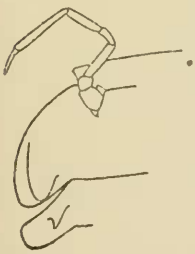

FIG. 3.—CUBARIS JAMAICENSIS. UNDER SIDE OF HEAD AND FIRST TWO SEGMENTS OF THORAX SHOWING COXOPODITES.

The first segment of the thorax is about twice as long in the median line as any of those following, which are subequal. The lateral parts of this segment are upturned, the dorsal surface being concave. The lateral parts of the second, third, and fourth segments are produced in narrow processes with rounded extremities. The lateral margins of the last three segments are nearly straight. Coxopodites are present on the first two segments on the under side. On the first segment they occupy only the posterior half of the lateral margin and are smaller than the lateral part of the segment, being narrower and shorter. The coxopodites of the second segment are small dentiform processes, obliquely placed some distance from the lateral margin.

The first five segments of the abdomen are short and subequal, the first being a little shorter than any of the others. The lateral parts of the first and second segments are covered by the seventh thoracic segment. The sixth or terminal segment is constricted in the middle, and has the posterior margin truncate. The peduncle of the uropoda occupies the space between the terminal segment and the lateral part of the fifth segment. The inner branch is short, not reaching to the extremity of the terminal abdominal segment by some distance. The outer branch is minute and is situated about the middle of the inner margin of the peduncle.

About 30 specimens were collected at Mandeville by Dr. Thomas Barbour.

Types in the Museum of Comparative Zoölogy; cotypes in the United States National Museum.

This species is closer to *Cubaris silvarum* (Dollfus) [1] than to any other described species. It differs from that form in not having the coxopodites of the first thoracic segment distinct on the entire length of the edge, in having the coxopodite of the second segment smaller and more distant from the lateral margin, and in having the tubercles on the body more distinct and differently arranged.

[1] Proc. Zool. Soc. London, 1896 pp. 393-394.